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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/709,596	05/17/2004	David B. Riggs	FIS920010074US2	3595

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CANTOR COLBURN LLP - IBM FISHKILL  
20 Church Street  
22nd Floor  
Hartford, CT 06103

EXAMINER
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MARKOFF, ALEXANDER

ART UNIT	PAPER NUMBER
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1792

NOTIFICATION DATE	DELIVERY MODE
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03/27/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

usptopatentmail@cantorcolburn.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/709,596	<b>Applicant(s)</b> RIGGS ET AL.	
	<b>Examiner</b> Alexander Markoff	<b>Art Unit</b> 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 December 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3,6,7 and 10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 6, 7, and 10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1, 3, 6, 7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over the state of the prior art admitted by the applicants in view of any one of Giedd (US Patent No 6,489,616) and Chang et al (US Patent No 4,144,634) and further in view of Cheney et al (US Patent No 3,135,638), Cooper et al (US Patent No 3,193,418) and Monden et al (US Patent No 6,344,966).

The applicants admitted in the specification that it was known in the art that control of the dopant ions is critical for the device performance and that diffusion of the ions into undesired areas can damage the device (part [0008]). The applicants further admitted that conventional cleaning methods conducted at different stages of the manufacturing comprise heating and rinsing the substrates (parts [0009-0013]).

Giedd and Chang et al teach that removing dopant ions with solvents was conventional in the art (at least column 16, lines 6-11 of Giedd and column 5, line 41-44 of Chang et al).

It would have been obvious to an ordinary artisan at the time the invention was made to utilize cleaning of dopant ions disclosed by Giedd and Chang et al as conventional for its conventional purpose to remove dopant ions from undesired areas in the prior processes disclosed by the admitted prior art with reasonable expectation of success in order to prevent damage of the devices by the ions in undesired areas.

Giedd and Chang et al do not specifically teach the claimed methyl ethyl ketone, but they teach its close homolog acetone.

In view of chemical and structural similarity an ordinary artisan would have been reasonably expected at the time the invention was made that methyl ethyl ketone and acetone would perform similarly in the applications wherein they used as solvents.

Moreover, Cheney et al, Cooper et al and Monden et al evidence that the referenced solvents are known equivalents in cleaning applications in the semiconductor industry. See at least column 3, lines 61-64 of Cooper et al, column 3, lines 36-39 of Cheney et al and column 19, lines 24-28 of Monden et al.

It would have been obvious to an ordinary artisan to use methyl ethyl ketone in the modified method of the prior art with reasonable expectation of adequate results in view its structural and chemical similarity with acetone, which is disclosed by the prior art, and especially in view of the fact that Cheney et al, Cooper et al and Monden et al evidence that acetone and methyl ethyl ketone are known equivalents in cleaning applications in the semiconductor industry.

### ***Response to Arguments***

5. Applicant's arguments filed 12/31/08 have been fully considered but they are not persuasive.

The applicants allege that Giedd teaches the use of aqueous solutions.

The examiner disagrees Giedd does not teach the use of aqueous solution. The applicants' allegation is not supported.

Further, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the

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rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

The applicants admitted in the specification that it was known in the art that control of the dopant ions is critical for the device performance and that diffusion of the ions into undesired areas can damage the device (part [0008]). The applicants further admitted that conventional cleaning methods conducted at different stages of the manufacturing comprise heating and rinsing the substrates (parts [0009-0013]).

Giedd and Chang et al are cited to show that removing dopant ions with solvents (acetone) was conventional in the art.

In view of chemical and structural similarity an ordinary artisan would have been reasonably expected at the time the invention was made that methyl ethyl ketone and acetone would perform similarly in the applications wherein they used as solvents.

Moreover, Cheney et al, Cooper et al and Monden et al were cited to evidence that the referenced solvents are known equivalents in cleaning applications in the semiconductor industry.

The examiner remains in the position is that it would have been obvious to an ordinary artisan to use methyl ethyl ketone in the modified method of he prior art with reasonable expectation of adequate results in view its structural and chemical similarity with acetone, which is disclosed by the prior art, and especially in view of the fact that Cheney et al, Cooper et al and Monden et al evidence that acetone and methyl ethyl ketone are known equivalents in cleaning applications in the semiconductor industry.

***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Markoff whose telephone number is 571-272-1304. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on 571-272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Alexander Markoff  
Primary Examiner  
Art Unit 1792

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Primary Examiner, Art Unit 1792